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(54) **Ion chromatography system using electrochemical suppression and detector effluent recycle.**

(57) A method of streamlining and lowering the cost of operation of ion chromatography as well as improving detection limits is disclosed. The apparatus includes chromatographic separating means (10) through which a sample is eluted in an eluent solution including an electrolyte. The apparatus includes a sandwich suppressor (11) having a chromatography effluent compartment separated from a detector effluent compartment by an ion exchange membrane (17,32,34,36), forming a chromatography effluent flow channel and a detector effluent channel, respectively. Electrode means (42,44) are disposed in communication with both flow channels for passing an electric current transverse to the solution that is passing through them. The chromatography effluent flows through the chromatography effluent flow channel of the suppressor and through detector (12) which detects resolved ionic species therein. The effluent from the detector is then recycled through the detector effluent flow channel and forms a sump for electrolyte ions passing across the chromatography effluent as well as supplying the water for the electrolysis reaction generating acid (or base) for suppression.

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EUROPEAN SEARCH REPORT

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EP 93 30 0359

| DOCUMENTS CONSIDERED TO BE RELEVANT | | | |
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| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int.Cl.5) |
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| D,Y | US-A-4 999 098 (POHL ET AL.) * column 4, line 1-40; figure 1 * | 1-6,8-12 7,13-15 | |
| A | GB-A-2 115 146 (YOKOGAWA ELECTRIC WORKS) * abstract * * page 3, line 1-21; figure 3 * * page 941, column 2, paragraph 4 * | 1-6,8-12 | |
| Y | ANALYTICAL CHEMISTRY, vol.61, no.9, 1 May 1989, COLUMBUS US pages 939 - 945 STRONG ET AL. 'electrodialytic membrans suppressor for ion chromatography' | 1,9 | |
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| The present search report has been drawn up for all claims | | | |
| Place of search THE HAGUE | | Date of completion of the search 7 October 1994 | Examiner Zinngrebe, U |
| <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons @ : member of the same patent family, corresponding document</p> | | | |

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